


## Section 1: Product & Company Information

---

**Product Name:** Citric Acid  
**Chemical Family:** Organic Acid  
**Product Use:** Drilling Mud Additive

---

### Workplace Hazardous Materials Information Systems Data (WHMIS):

	Class ID	Class	Workplace Hazard
	D-2-B	Materials Causing Other Toxic Effects - Toxic	Skin and eye irritant

---

**Manufacturer Name:** HiTech Fluid Systems  
**Address:** #1800, 505 3rd Street SW, Calgary, AB T2P 3E6 Canada  
**General Phone Number:** (403)547-2906  
**General Fax Number:** (403)547-3129  
**MSDS Revision Date:** June 1, 2008  
**Supercedes:** June 23, 2005  
**Prepared By:** HiTech Fluid Systems  
**Preparer's Phone:** (403)547-2906

## Section 2: Composition/Information on Ingredients

---

Chemical Name	Concentration	CAS#
Citric Acid	100%	77-92-9

## Section 3: Hazards Identification

---

**Emergency Overview:** Not Available

### Routes of Entry:

**Skin Contact:** Yes  
**Skin Absorption:** No  
**Eye Contact:** No  
**Inhalation:** No  
**Ingestion:** Yes

**Potential Health Effects:**

<b>Skin:</b>	May cause irritation.
<b>Eye:</b>	May cause irritation.
<b>Inhalation:</b>	Nuisance dust
<b>Ingestion:</b>	May cause irritation of mucous membranes and gastrointestinal tract.

---

**Section 4: First Aid Measures**

---

<b>Eye Contact:</b>	Flush eyes with water for at least 15 minutes. If adverse symptoms develop, seek medical attention.
<b>Skin Contact:</b>	Wash with soap and water. If adverse symptoms develop, seek medical attention.
<b>Inhalation:</b>	Remove patient to fresh air. If breathing has stopped, administer artificial respiration, and seek medical attention.
<b>Ingestion:</b>	Give patient large quantities of water or milk to drink, then induce vomiting. Contact a physician.
<b>Other First Aid:</b>	Not Available

---

**Section 5: Fire Fighting Measures**

---

<b>Conditions Of Flammability:</b>	Non-flammable
<b>Extinguishing Media:</b>	Dry chemical, CO <sub>2</sub> , foam, water
<b>Flashpoint:</b>	Not Available
<b>Upper Flammable Limit:</b>	2294g/m <sup>3</sup>
<b>Lower Flammable Limit:</b>	282.4g/m <sup>3</sup>
<b>Autoignition Temperature:</b>	1000-1020°C
<b>Protective Equipment:</b>	Firefighters must wear appropriate breathing apparatus and clothing.
<b>Sensitivity To Impact or Static Discharge:</b>	Not available
<b>Hazardous Combustion Products:</b>	Not available
<b>Fire Comment:</b>	

---

**Section 6: Accidental Release Measures**

---

<b>Personnel Precautions:</b>	Use proper personal protective equipment as listed in section 8.
<b>Spill Cleanup Measures:</b>	Contain spill. Pick up solids and place in tightly sealed container.

## Section 7: Handling & Storage

---

**Handling:** Avoid ingestion. Practice reasonable caution and personal cleanliness. Avoid skin and eye contact.

**Storage:** Store in a cool, dry, well ventilated place. Keep container tightly closed and away from incompatible materials.

## Section 8: Exposure Controls, Personal Protection, Exposure Guidelines

---

**Engineering Controls:** Provide mechanical ventilation to prevent dust concentrations, and to reduce potential exposure.

**Personal Protective Equipment:** Chemical-resistant clothing is recommended, including gloves, apron, and goggles.

**Respiratory Protection:** In absence of proper ventilation, it is recommended to wear an approved dust mask.

**Exposure Limits:** LD<sub>50</sub>(oral mouse)=5040 mg/kg LD<sub>50</sub>(oral rat)= 6730-11700 mg/kg Dermal, acute: 500mg/24 hr-moderate Eye: 750 mg/24 hr severe

Chemical Name	ACGIH TLV-TWA	OSHA PEL-TWA
Citric Acid	Not Available	Not Available

## Section 9: Physical & Chemical Properties

---

<b>Physical State:</b>	Solid
<b>Odour And Appearance:</b>	White powder or granules; odourless
<b>Odour Threshold:</b>	N/A
<b>Boiling Point:</b>	N/A
<b>Evaporation Rate:</b>	< 1
<b>Melting Point:</b>	153°C
<b>Freezing Point:</b>	N/A
<b>Specific Gravity:</b>	1.665
<b>Solubility in Water:</b>	60% @ 20C
<b>Vapour Density:</b>	N/A
<b>Vapour Pressure:</b>	N/A
<b>pH:</b>	2.2
<b>Flash Point:</b>	Not Available
<b>Volatility (% by volume):</b>	Not available
<b>Coefficient of Water to Oil distribution:</b>	N/A

## Section 10: Stability & Reactivity

---

<b>Chemical Stability:</b>	Yes
<b>Hazardous Polymerization:</b>	Will not occur.
<b>Conditions Of Chemical Instability:</b>	
<b>Incompatible Substances:</b>	Incompatible with copper, zinc, aluminum, and their alloys, due to corrosion. Avoid contact with metal nitrates and strong oxidizers.
<b>Special Decomposition Products:</b>	CO, CO <sub>2</sub>

## Section 11: Toxicological Information

---

Chemical Name	LD <sub>50</sub> (Oral Rat)	LD <sub>50</sub> (Dermal Rabbit)	LC <sub>50</sub> (Inhalation Rat)
Citric Acid	6730 mg/kg	Not Available	Not Available

<b>Effects Of Acute Exposure:</b>	N/A
<b>Effects Of Chronic Exposure:</b>	Irritation
<b>General Irritancy Of Product:</b>	Slight
<b>Sensitization:</b>	N/A
<b>Carcinogenicity:</b>	N/A
<b>Reproductive Toxicity:</b>	N/A
<b>Teratogenicity:</b>	N/A
<b>Embryotoxicity:</b>	Not Available
<b>Mutagenicity:</b>	N/A
<b>Synergistic Products:</b>	N/A

## Section 12: Ecological Information

---

<b>Ecotoxicity:</b>	Not Available
<b>Environmental Fate:</b>	Not Available

## Section 13: Disposal Considerations

---

<b>Waste Disposal:</b>	All waste should be disposed of according to federal, provincial and local regulations. Containers should NOT be re-used. Containers should be disposed of in accordance with government regulations.
------------------------	---

## Section 14: Transport Information


---

**TDG Classification:** Not regulated  
**DOT UN Number:** N/A  
**Shipping Notes:** Not available

## Section 15: Regulatory Information

---

### Workplace Hazardous Materials Information Systems Data (WHMIS):

	Class ID	Class	Workplace Hazard
	D-2-B	Materials Causing Other Toxic Effects - Toxic	Skin and eye irritant

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

## Section 16: Additional Information

---

**MSDS Revision Date:** June 1, 2008

**MSDS Revision Notes:**

**MSDS Author:** HiTech Fluid Systems

**Disclaimer:** This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet.